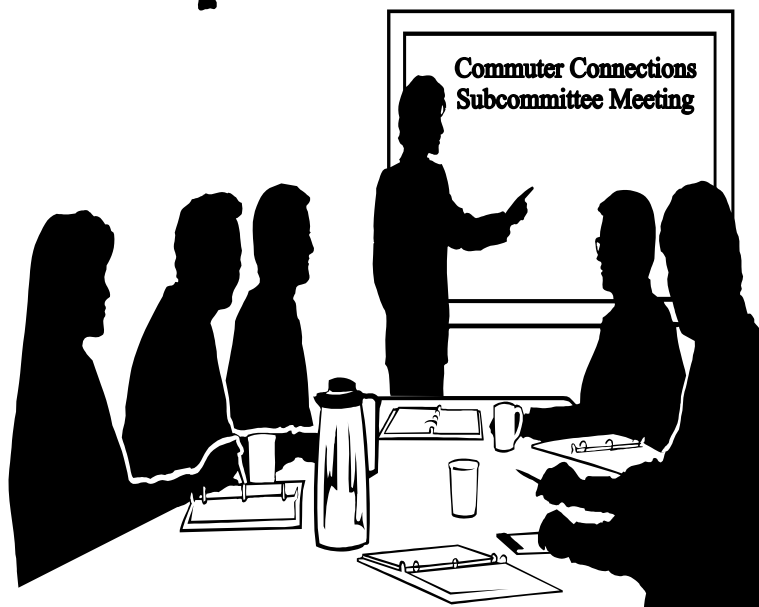


HANDOUTS

from previous meeting



January 27, 2009

MPO Role: Coordination of Comprehensive Transportation Planning for Reduction of VMT and Regional Climate Action

**TRB Annual Meeting, Session #116
January 11, 2009**

Ronald Kirby

**Director of Transportation Planning
National Capital Region Transportation Planning Board (TPB)
Metropolitan Washington Council of Governments (COG)**

How should we address CO₂?

- A global or national **cap and trade** program (e.g. Lieberman-Warner Bill) or a **carbon tax** is expected to set a price threshold for CO₂ abatement, which will help determine cost-effectiveness of strategies
- Recent studies (e.g. McKinsey & Company) put the price threshold at around \$50/ton
- Individual states, regions, and local governments are setting their own reduction goals based on international estimates of needed reductions

What is the TPB Currently Doing?

- Developing baseline GHG projections for transportation through 2030
- Analyzing a “What Would It Take?” Scenario for GHG reduction, including fuel efficiency, alternative fuels, travel efficiency
- Seeking GHG reduction strategies that could be included in the region’s transportation plans and programs
- Using goals set in COG Climate Change Report of November 2008
 - Return to 2005 levels by 2012
 - 20% below 2005 levels by 2020
 - 80% below 2005 levels by 2050

The Two New Scenarios

CLRP Aspirations

Draws on past studies and public outreach to provide an ambitious yet attainable vision of land use and transportation for the 2010 CLRP update and to eventually serve as an unconstrained long range plan.

What Would it Take?

Starts with COG regional CO₂ goals and assesses what scales and combinations of interventions will be necessary to achieve the goal for the transportation sector.

Setting up the WWIT Scenario for Analysis

Analyze three categories of strategies to reduce mobile CO₂ emissions for effectiveness, cost-effectiveness, and implementation timeframe

Assess combinations of strategies from these three categories:

Fuel Efficiency

Beyond CAFE standards
[currently 35 mpg by 2020]

Fuel Carbon Intensity

Alternative fuels
(biofuels, hydrogen, electricity)

Vehicle technology
(hybrid engine technology)

Travel Efficiency

Reduce VMT through changes in land use, travel behavior, prices

Reduce congestion

Improve operational efficiency

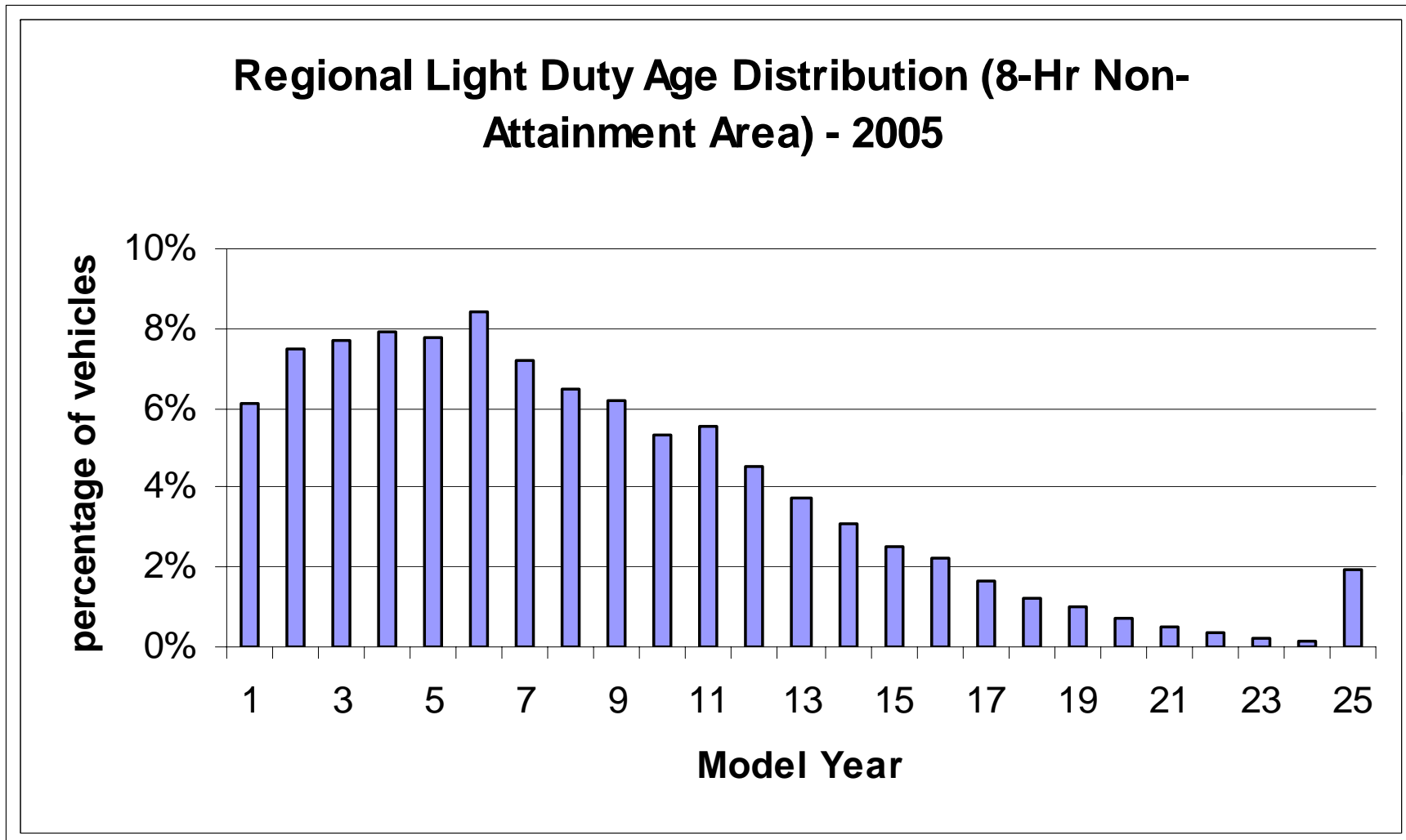
Where are Transportation Emissions Coming From?

2010 Travel and CO₂ Emissions 8-Hour Ozone Non-Attainment Area

	VMT (billions) - Annual	%	CO2 Emissions (Millions of Tons) - Annual	%
Type I (LDGV,MC,LDDV)	19.06	47%	6.76	24%
TYPE II (LDGT1,2,3 & 4 and LDDT)	18.94	46%	15.38	56%
Type III (HDGV & HDDV)	2.94	7%	5.46	20%
Total	40.95	100%	27.60	100%

source: 2007 CLRP

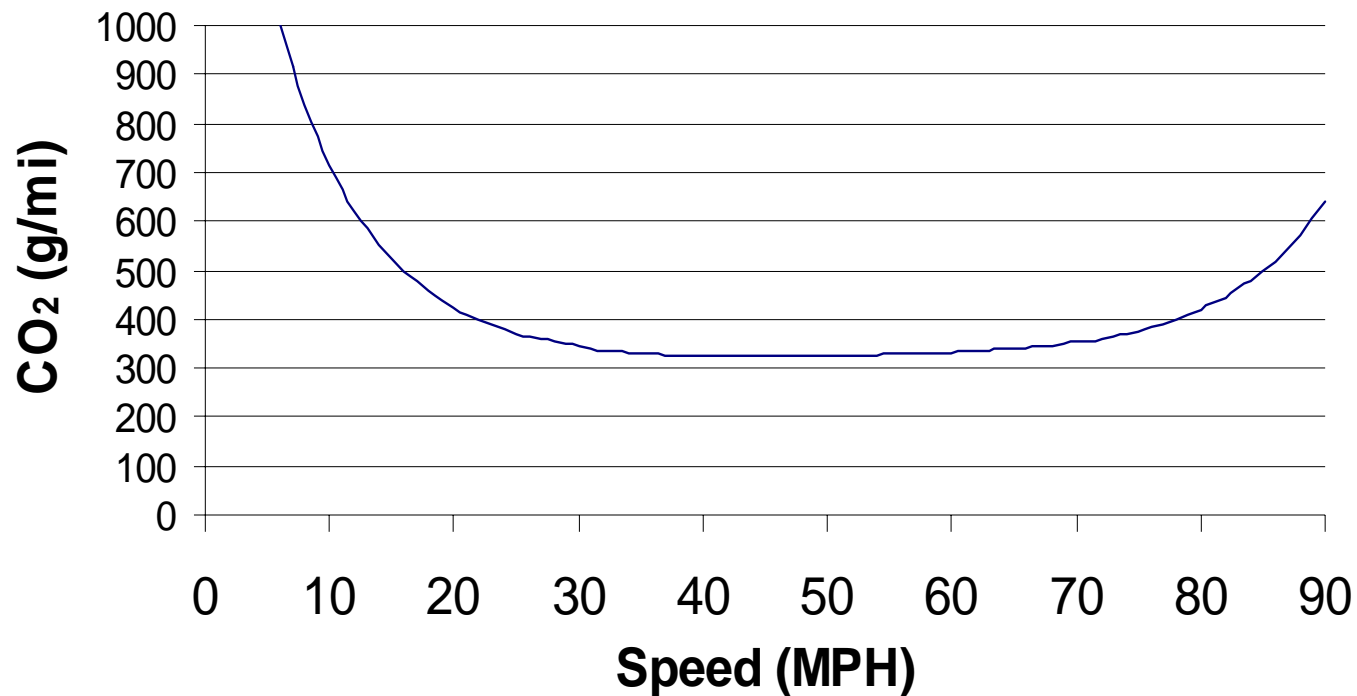
Characteristics of the Region's Vehicle Fleet



Effectiveness

Some CO₂ reductions can be accomplished by reducing congestion and improving operational efficiency; further analysis needed

CO₂ Emissions Rates by Speed



Source: University of California, Riverside

Cost-effectiveness

How can we prioritize strategies; effectiveness, scale, and cost-effectiveness?

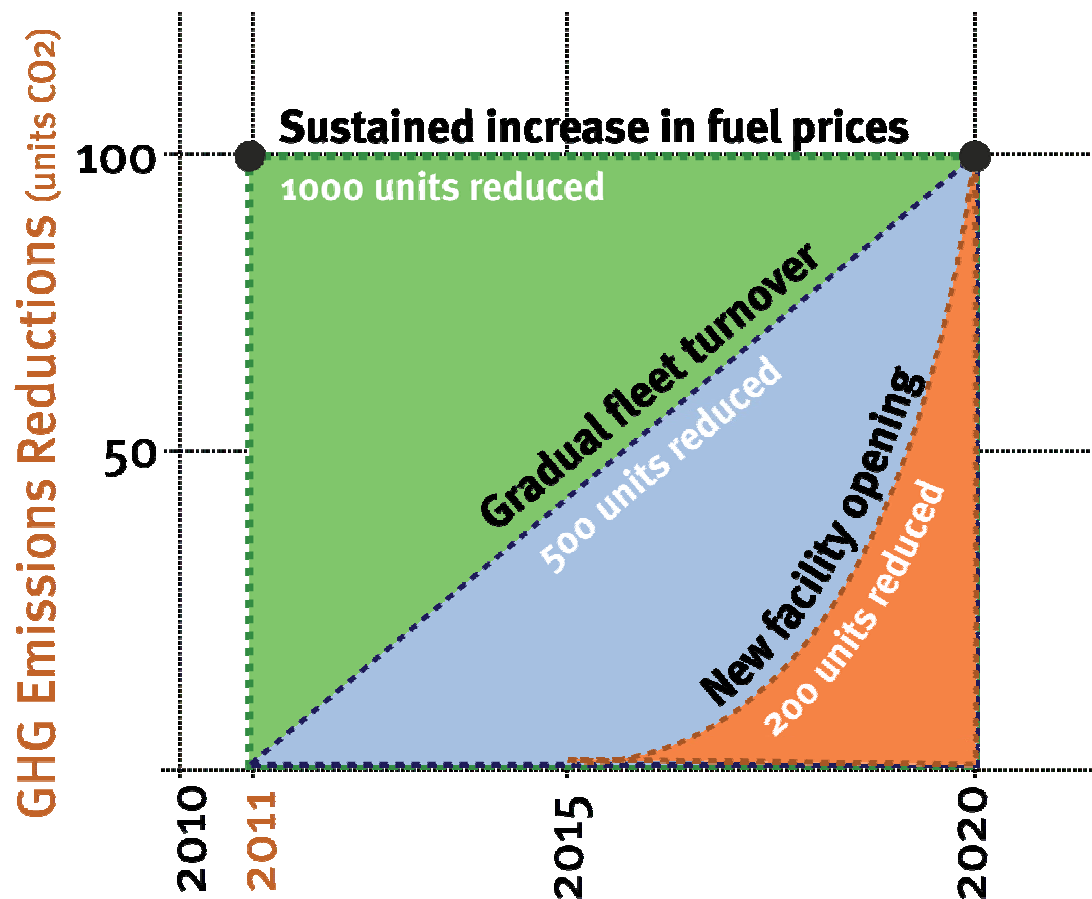
Cost-effectiveness of Example Transportation Emissions Reduction Measures (\$ per ton of CO₂ reduced)

Number	Category Description	CO ₂ Cost Effectiveness Range *
1	Telecommute Programs	\$10 to \$40
2	Signal Optimization	\$30 to \$50
3	Park & Ride Lots (Transit and HOV)	\$100 to \$500
4	Transit Service improvements	\$100 to \$800

*TPB staff estimates based on existing program commitments

Timeframe for Implementation

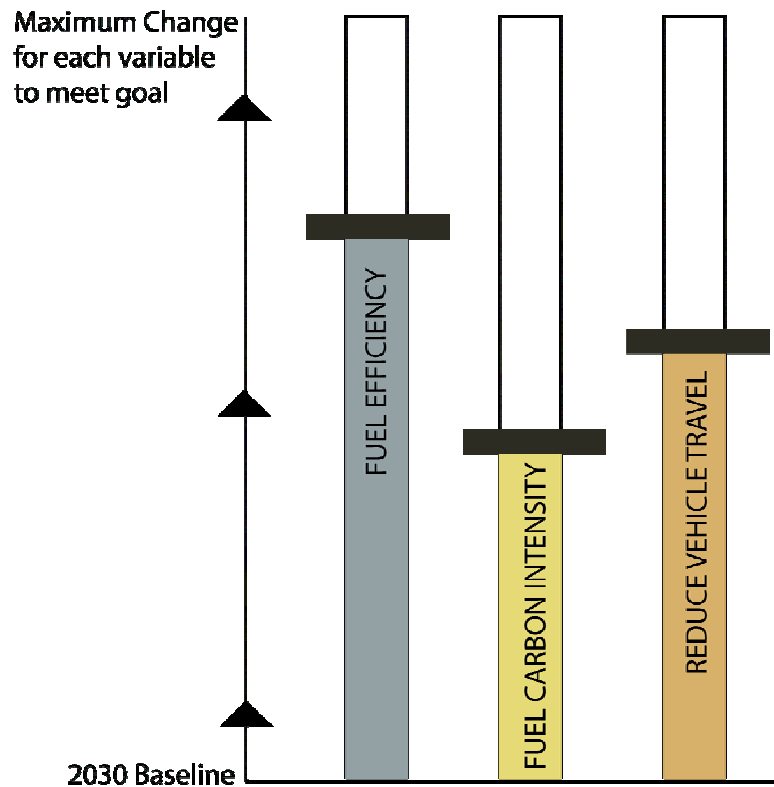
GHGs remain in the atmosphere for decades, so must look at impacts of cumulative emissions



While all 3 example measures reduce 100 units of CO2 in 2020, the cumulative emissions reductions from 2011-2020 differ based on the time required for implementation and realization of benefits.

Products

“Sliders” metaphor



Different combinations of interventions can be assessed for cost-effectiveness and feasibility.

Combination #1: Assumes no change in current energy policy

To achieve 40% reduction in mobile CO₂ emissions below 2005 levels by 2030

Fuel Efficiency

Beyond CAFE standards [currently 35 mpg by 2020 for LDVs]

Fuel Carbon Intensity

Alternative fuels (biofuels, hydrogen, electricity)

Travel Efficiency

Reduce VMT through changes in land use, travel behavior, prices

Reduce congestion

Improve operational efficiency

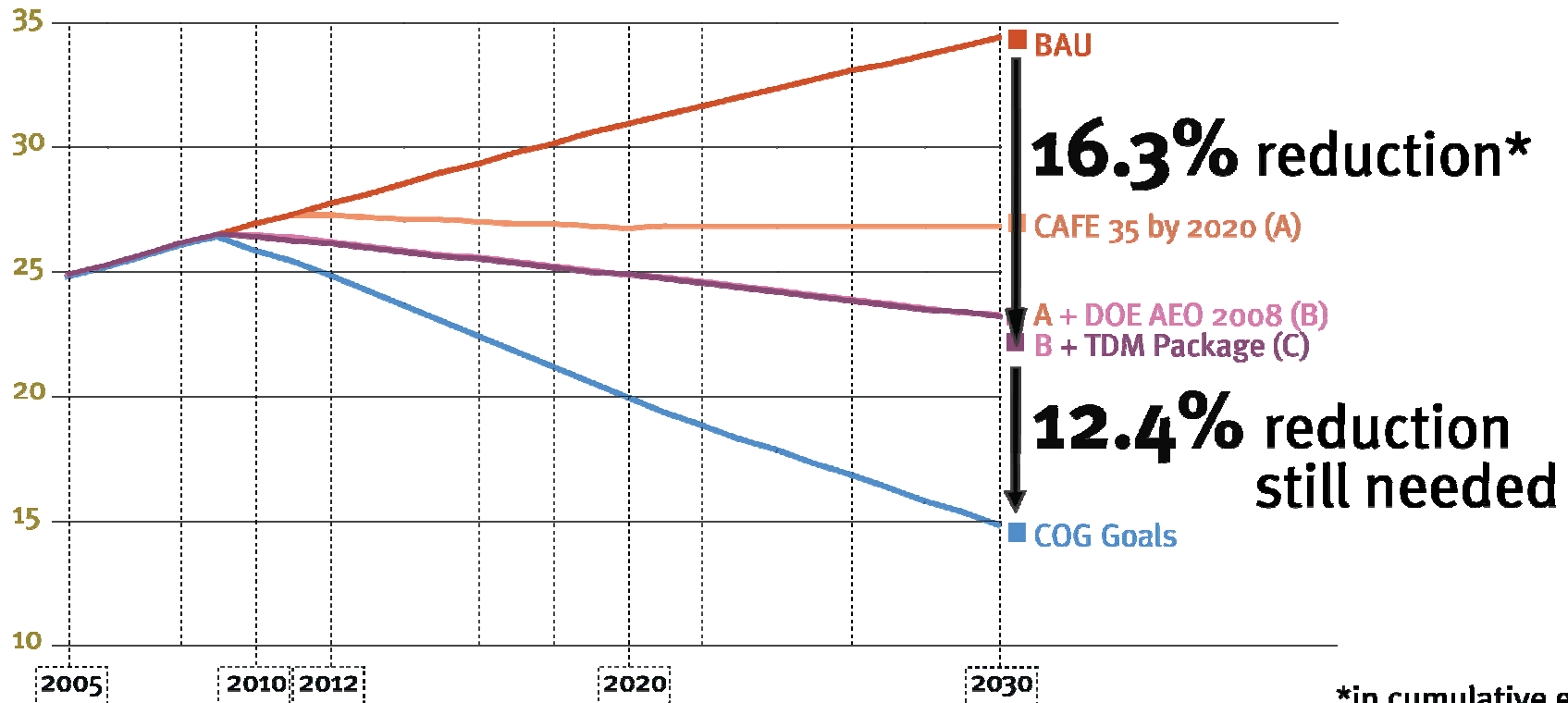
Travel Efficiency

TDM Package

1. Maryland and Virginia Telework
2. Guaranteed Ride Home
3. Employer Outreach
4. Employer Outreach - Bike
5. Ridesharing

Applies to Light Duty Vehicles only

annual million tons CO₂



*in cumulative emissions

Combination #1: Assumes no change in current energy policy

To achieve 40% reduction in mobile CO₂ emissions below 2005 levels by 2030

Fuel Efficiency
Beyond CAFE standards [currently 35 mpg by 2020 for LDVs]

Fuel Carbon Intensity
Alternative fuels (biofuels, hydrogen, electricity)

Travel Efficiency
Reduce VMT through changes in land use, travel behavior, prices
Reduce congestion
Improve operational efficiency

Travel Efficiency

Signal Optimization

3400 Signals regionwide

Applies to Full Fleet

annual million tons CO₂

